

## Demonstration of Subject Mastery for the Doctoral General Exam in Building Technology

Name of student:

MIT student ID #:

Name of Primary Advisor:

To pass the subject area mastery portion of the doctoral qualifying exam, students must earn three As and one B (or four As) in at least four subjects chosen across three of the seven areas from the table below. Substitutions of subjects not included in the list below will be considered on a case-by-case basis and will require approval from all BT faculty.

Area	Subjects	Grade
Thermal Sciences	4.424J/2.52J or 2.55 (Heat Transfer)	
	2.25 (Fluid Mechanics)	
	2.42 (Thermodynamics)	
	4.430 (Daylighting)	
Building Systems and Performance	4.431 (Architectural Acoustics)	
	4.421 (Space-Conditionings Systems for Low-Carbon Buildings)	
	2.151 (Controls)	
	2.093 or 2.094 (Finite Element Analysis)	
Structural Mechanics and Analysis	1.573 (Structural Mechanics)	
	1.581 (Structural Dynamics)	
	1.571 (Structural Analysis)	
	4.445 (Analysis of Historic Structures)	
	3.22 (Mechanical Behavior of Materials)	
Materials and Construction	3.36 (Cellular Solids)	
	3.560 (Industrial Ecology of Materials)	
	2.83 (Energy, Materials and Manufacturing)	
Urban Systems and Resources	11.526J/1.251J (Land Use and Transportation Planning)	
	15.871 (System Dynamics)	
	IDS.521 (Energy Systems and Climate Change Mitigation)	
	4.433 (Modeling Urban Energy Flows)	
Optimization and Machine Learning	6.255J/15.093J (Optimization Methods)	
	6.252J/15.084J (Nonlinear Optimization)	
	4.450J/1.575J (Structural Optimization)	

	16.888J/IDS.338J (Multidisciplinary Optimization)	
	6.862 or 6.867 (Machine Learning)	
	15.077J/IDS.147J (Statistical Learning and Data Mining)	
Computational Geometry	4.517 (Parametric Design and BIM)	
	4.521 or 4.522 (Visual Computing)	
	GSD SCI-6338 (Introduction to Computational Design)	
	18.9501 (Differential Geometry)	
	6.838 (Shape Analysis)	

In case you would like to substitute a subject that is not included in the list above, please list the subject plus a brief description below and submit your petition along with the subject syllabus to the Director of the Building Technology Program for consideration.

Petition to substitute a subject

Based on the candidate's performance in the above listed subjects, the subject area mastery portion of the doctoral qualifying exam,

have been fulfilled.

have not been fulfilled.

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Director, Building Technology Program

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Date of completion